

received 5/84 *LD* DMS 2014

MONSANTO PRODUCT NAME

**SKYDROL® LD-4 FIRE
RESISTANT HYDRAULIC FLUID**

MONSANTO COMPANY
800 N. LINDBERGH BLVD.
ST. LOUIS, MO 63167

**Emergency Phone No.
(Call Collect)
314-694-1000**

PRODUCT IDENTIFICATION

SKYDROL® fire resistant hydraulic fluids are proprietary formulations and are not identified by CAS numbers. All components of SKYDROL fluids appear on the Inventory of Chemical Substances published by the U.S. Environmental Protection Agency.

Chemical Family: Phosphate esters with performance additives.
DOT Hazard Class: This product is not classified as a hazardous material by the U.S. Department of Transportation.
Label Requirement: Product Label
**Reportable Quantity (RQ)
Under U.S. Clean Water
Act Regulations:** Not Listed
**U.S. Surface Freight
Classification:** Hydraulic System Fluid, Other Than Petroleum

WARNING STATEMENTS

CAUTION!
MAY CAUSE IRRITATION TO EYES, SKIN AND RESPIRATORY TRACT

PRECAUTIONARY MEASURES

Avoid prolonged or repeated skin contact. Wear impervious gloves.
Do not get in eyes. Wear chemical safety goggles.
Avoid breathing mist or vapor. Wear a NIOSH approved respirator when mist or vapor is possible.
Observe all labeled safeguards until container is destroyed. DO NOT REUSE THIS CONTAINER.

EMERGENCY AND FIRST AID PROCEDURES

FIRST AID: IF IN EYES, immediately flush with plenty of water for at least 15 minutes. Call a physician.
IF ON SKIN, immediately flush with plenty of water. Remove contaminated clothing. Wash clothing before reuse.

OCCUPATIONAL CONTROL PROCEDURES

Eye Protection: Wear chemical safety goggles to prevent eye contact.
Skin Protection: Wear appropriate impervious gloves and protective clothing to prevent skin contact. Wear face shields and aprons when splashing is likely. Launder contaminated clothing and clean protective equipment before re-use.

(Occupational Control Procedures Continued On Next Page)

OCCUPATIONAL CONTROL PROCEDURES (Continued)

Respiratory

Protection:

Use NIOSH approved equipment when exposure to mist or aerosols is possible or when working with product at elevated temperature. Consult respirator manufacturer to determine appropriate type equipment for given application.

Ventilation:

Provide ventilation to minimize exposure. Local exhaust ventilation preferred.

Airborne

Exposure Limits:

No permissible exposure limit or threshold limit value has been established by OSHA or the ACGIH for SKYDROL LD-4 fire resistant hydraulic fluid, although a constituent of the product does have exposure guidelines.

Tributyl Phosphate (CAS No. 126-73-8)

OSHA PEL/TWA: 5 mg/m³ (0.4 ppm)
ACGIH TLV®/TWA: 2.5 mg/m³ (0.2 ppm)
ACGIH TLV/STEL: 5 mg/m³ (0.4 ppm)

FIRE PROTECTION INFORMATION

Auto Ignition Temperature: 750°F (Min.)

Method: ASTM D-2155

Flash Point: 320°F (Min.)

Method: Cleveland Open Cup

Fire Point: 350°F (Min.)

Method: Cleveland Open Cup

Extinguishing Media:

Water spray, foam, dry chemical, CO₂ or other agents suitable for Class B fires.

Special Firefighters

Procedures:

Wear self-contained breathing apparatus when exposed to products of combustion. Wear protective equipment to minimize skin contact.

Unusual Fire Hazards:

Phosphorus oxide fumes may be produced during fires.

REACTIVITY DATA

Stability:

Product is stable under normal conditions of storage and under continued use up to approximately 250-275°F.

Materials to Avoid:

Exposure to strong oxidizing agents may result in generation of heat and combustion products.

Hazardous Decomposition

Products:

Oxides of phosphorus may form. No other uniquely hazardous decomposition products are expected. If the product is burned, as with any organic material, carbon monoxide and soot can be produced.

Hazardous Polymerization:

Does not occur.

PHYSIOLOGICAL EFFECTS SUMMARY

Human Experience

Repeated contact with SKYDROL LD-4 fire resistant hydraulic fluid may cause drying or cracking of exposed skin. Eye contact may produce marked pain but does not cause eye damage.

Animal Data

Oral LD₅₀ (Rat): 2,100 mg/kg, Slightly Toxic

Dermal LD₅₀ (Rabbit): >5,010 mg/kg, Practically Nontoxic

Eye Irritation (Rabbit): (FHSA) 6.1 on a scale of 110.0, Slightly Irritating

Skin Irritation (Rabbit): (FHSA) 3.7 on a scale of 8.0, Moderately Irritating

PHYSICAL DATA

Appearance: Clear, purple, oily liquid

Boiling Point @ 380 mm Hg
(Based on Vapor
Pressure Data):

~257°F

Pour Point: -80°F (Maximum)

Specific Gravity @ 25/25°C: 1.004-1.014

Viscosity @ 100°F: 10.8-11.6 cs

Refractive Index, n 25/D: 1.443 - 1.451

Note: These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

SPILL, LEAK & DISPOSAL INFORMATION

Waste Disposal: Waste should be incinerated or disposed of in a hazardous waste landfill. Either disposal route should be in accordance with all local, state or federal regulations. This material should not be spilled, dumped, rinsed, or washed into sewers or public waterways.

Spill or Leakage

Procedures:

Absorb spilled or leaked material on clay, sawdust, or other absorbent material.

ADDITIONAL COMMENTS

Environmental Toxicity Information:

96-hr LC₅₀ Trout: 5.2 ppm, Moderately Toxic
96-hr LC₅₀ Fathead Minnow: 4.8 ppm, Moderately Toxic
48-hr EC₅₀ *Daphnia*: 5.8 ppm, Moderately Toxic
96-hr EC₅₀ Algae - Cell Count: 10 ppm, Moderately Toxic
96-hr EC₅₀ Algae - Chlorophyll: 8.2 ppm, Moderately Toxic

Product Qualifies under the following specifications:

BMF 3-11F, Type IV, Class 1, Grade A
DMS 2014C, Type IV, Class 1
LAC MS C-34-1224, Type IV
SAE AS 1241A, Type IV, Class 1

DATE: 11/83
MSDS NO.: M00006727

REVISED: X

SUPERSEDES: 8/79

FOR ADDITIONAL NON-EMERGENCY INFORMATION, CONTACT:

Monsanto Company
800 North Lindbergh Boulevard
St. Louis, MO 63167
314-694-1000

MATERIAL SAFETY DATA

SKYDROL® LD-4 Fluid

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MATERIAL SAFETY DATA

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This form has been approved by the Occupational Safety and Health Administration as "equivalent to" OSHA Form 20.

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